**A Case of Secondary Syphilis with Oral Findings**

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**Abstract**

The incidence of syphilis has been on the rise, becoming a major global health problem. Syphilis is the "great imitator" of disease, requiring clinicians and public-health consultants to familiarize themselves with a variety of presentations in order to recognize it.1-4 We present the case of a young, HIV-positive male with secondary syphilis, focusing on oral manifestations of the disease and the need to have syphilis on the differential when oral lesions of unknown significance are present.

**Introduction**

Humans are the only known natural hosts to the microorganism *Treponema pallidum*, the spirochete bacterium that causes syphilis. Multiple reports suggest that while the global prevalence of syphilis had been decreasing, the disease is now reemerging as a significant public health concern.1-4 Sexual intercourse is the main route of transmission, with genital organs being the main sites of inoculation. The oral cavity and anal region can also be affected. Transmission through the placenta during pregnancy (congenital syphilis) and through contact with a syphilis lesion via kissing, breastfeeding, and mouth-to-mouth transfer of prechewed food have also been reported.5-7

Syphilis progresses in four stages: primary, secondary, latent, and tertiary. The primary stage classically presents with a typically painless, self-healing ulcer. The lesion develops at the site of inoculation and has an incubation range of three days to 90 days.6,8 The secondary stage can manifest within weeks to a few months after the primary stage and presents with one or more systemic findings including fever, headache, malaise, general lymphadenopathy, weight loss, rash, and/or alopecia, among others. Rash is the most characteristic finding of secondary syphilis and has myriad presentations.2,6,9 In the latent stage, no symptoms are present, but the individual is sero-reactive. Latent syphilis acquired in the last year is termed early latent syphilis; all other cases are termed late latent.5,6 Patients with cardiovascular or gummatous syphilis are in the tertiary phase.

Syphilis with central nervous system involvement is termed neurosyphilis. Neurosyphilis can occur during any stage of the disease, presenting with cognitive dysfunction, motor and sensory deficits, ataxia, paralysis, tabes dorsalis, Argyll Robertson pupils, and other neurological symptoms.2,3,5,8

Oral manifestations of syphilis vary widely and can mimic other, more common oral diseases. Oral lesions observed in the primary stage are associated with oral sex habits. Oral lesions in secondary syphilis, on the other hand, are part of a systemic process and are much more common, presenting in one third to one half of all secondary syphilis patients. Common oral presentations in the secondary stage include painless aphthous ulcers, lesions with whitish edges and irregularly shaped borders, and verrucous papules or plaques.5,6,10

This case report describes an HIV-positive patient with secondary syphilis and associated oral ulcerations. The case highlights the importance of including syphilis on the differential when oral lesions are present.

**Case Report**

A 27-year-old male with a past medical history of hepatitis, tuberculosis, Crohn's disease, and HIV presented with a three-week history of painful red papules and plaques all over his body (Figure 1). He also reported ulcers on his tongue and upper gum that started around the same time as the skin lesions.

On examination, the patient had multiple, irritated, erythematous, scaly papules and patches distributed over his skin, including on the palms and soles (Figures 2, 3). Oral examination demonstrated erythematous ulcers with crust located on the dorsal tongue and upper gum. No lymphadenopathy was present. Two biopsies of the cutaneous lesions were performed to rule out secondary syphilis, guttate psoriasis, viral exanthem, lichen planus, pityriasis lichenoides chronica, drug eruption, lymphoma, and histoplasmosis.

Pathological examination of the specimens with a spirochete stain demonstrated numerous spirochetes in the epidermis and superficial dermis (Figures 4, 5). Acid-fast bacterial stain for mycobacteria was negative, as was Grocott's methenamine silver and periodic acid-Schiff stains for fungi. The patient was referred to infectious disease for treatment with 2.4 million units of intramuscular benzathine penicillin G.

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**Figure 1.** Painful, red papules and plaques disseminated over the skin.

**Figure 2.** Irritated, erythematous, scaly papule of secondary syphilis.

**Figure 3.** Skin manifestations of secondary syphilis on the right palm.

**Figure 4.** Spirochete stains demonstrating spirochetes in the epidermis and superficial dermis.

**Figure 5.** Skin manifestations of secondary syphilis.
Our patient had multiple oral lesions with concomitant papulosquamous skin lesions, suggesting a diagnosis of secondary syphilis. Syphilitic oral lesions can occur at any stage of syphilis, but they most commonly appear in the secondary stage (30% of patients). The oral lesion for primary syphilis is often a single, painless ulcer in the oropharynx. It most commonly occurs on the lips and is the site of direct inoculation via oral sex. The primary lesion is teeming with spirochetes, making it highly contagious.

Oral lesions in secondary syphilis occur secondary to systemic dissemination of the T. pallidum spirochetes. They present most commonly on the tongue, lips, and buccal mucosa with a mixed, nonspecific appearance; presentations include, but are not limited to, single or multiple macules, papules, plaques, and ulcers sometimes associated with pharyngitis, tonsillitis, laryngitis, or lymphadenopathy. Grey or white, moist, verrucous papules or plaques representing oral condyloma lata can also be observed. These lesions are highly contagious secondary to syphilitic infection.

Because the incidence of some sexually transmitted diseases, most notably syphilis, are higher in people infected with HIV, it is recommended that all persons diagnosed with syphilis be tested for HIV infection. Testing was not performed on our patient due to a prior history of HIV infection.

Since patients infected with syphilis can be asymptomatic, people who are pregnant or at high risk for acquiring syphilis should be screened for the disease.

Demonstration of spirochetes on histopathological examination, along with clinical assessment, led to a presumptive diagnosis of secondary syphilis.

Treatment of secondary syphilis involves a parenterally administered dose of penicillin G, with preparation dependent on the stage of syphilis. A one-time intramuscular injection of 2.4 million units benzathine penicillin G is recommended for primary, secondary, and early latent syphilis. The recommended treatment for late latent syphilis and tertiary syphilis is 7.2 million units of benzathine penicillin G administered as three doses of 2.4 million units intramuscularly at one-week intervals. Neurosyphilis requires 18 million units per day to 24 million units per day of aqueous crystalline penicillin G, administered as 3 million to 4 million units IV every four hours or continuous infusion, for 10 days to 14 days.

Conclusions
The global resurgence of syphilis, especially in HIV-infected individuals, warrants a high index of suspicion when evaluating oral lesions of unknown origin.